

Effectiveness of Animation in Storytelling with Data - Shoop Idea 1

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1 Introduction

In this current generation where end-users and developers are increasingly surrounded by all facets of data, visualizations can be extremely helpful in getting a final-presentable result. When it comes to data, storytelling via visualization is an effective way to set-the-scene and tell your intended story.

The community and especially online blogposts have become more saturated with data storytelling; another coined term is "scrollytelly" because you scroll down a webpage to continue the visualization. We believe that, in order to tell an effective and interpretable story, one can utilize the potential of animations (aka. transitions) to create visualizations that have a smooth flow and clear narrative.

2 One-sentence description

Through controlled storytelling visualization experiments we determine the effective of the use of transition animations in conveying a clear story through data visualizations.

3 Project Type

Experiment

4 Audience

Who is the audience for this project? How does it meet their needs? What happens if their needs remain unmet?

The best-intended audience for our results would be anyone that wishes to incorporate animations/transitions in their storytelling visualization. The use of animations in storytelling is likely just

an augmented feature on-top of the primary data visualization.

5 Approach

5.1 Details

What is your approach?

We will create a basic and understandable storytelling with data visualization, which essentially has version A and version B (think AB testing).

Version A will be the primary visualization, with limited interactivity. The test subject will view the page, and be questioned on certain fields if they understood the intended "story."

Version B will be a near-identical visualization but with smooth animations and transitions between the graphics. We would then hopefully see the subject's responses relate to the changes made which the animations/transitions create.

5.2 Evidence for Success

Why do you think it will work?

We believe it will work because of the anecdotal feedback that we will receive from the respondent. Furthermore, if we see that the responses on our version A visualization do not quite match with the intended story narrative, and if version B's participant responses more closely line-up with the intended story, then we will know that our version B (the one with animations/transitions) got the intended story better than version A.

6 Best-case Impact Statement

In the best-case scenario, what would be the impact statement (conclusion statement) for this project? [5, 3]

In the best-case scenario, after performing our limited experimental run, we will have evidence of the usefulness of animations in storytelling with data. This could pave the way for more careful use of animations in storytelling, which could lead to more engaging, visually interesting, and compelling stories told via data; it's still important to remember though that one can abuse animations and transitions where it's unnecessary or used wrongly.

7 Major Milestones

8 Obstacles

8.1 Major obstacles

8.2 Minor obstacles

9 Resources Needed

What additional resources do you need to complete this project?

10 5 Related Publications

List 5 major publications that are most relevant to this project, and how they are related (sample citation [5]).

- J. Heer et al. created a 2007 paper on the effectiveness of animated transitions in statistical data graphics[1]. . It serves as the foundational paper on animation transitions, even being brought up in Mike Bostock's 2011 paper on D3.
- Liao et al. propose a new semi-automatic technique to creating animations of volume data based on the user's interaction in navigating a dataset and then adjusting rendering parameters [2].
- Narrative viz, telling stories with data (this was posted as a resource in the google sheet of proj topics).[4]

11 Define Success

What is the minimum amount of work necessary for this work be publishable?

References

- [1] J. Heer and G. Robertson. Animated transitions in statistical data graphics. *IEEE Transactions on Visualization and Computer Graphics*, 13(6):1240–1247, Nov. 2007.
- [2] I. Liao, W.-H. Hsu, and K.-L. Ma. Storytelling via navigation: A novel approach to animation for scientific visualization. *Smart Graphics*, pages 1–14, 2014.
- [3] W. A. Pike, J. Stasko, R. Chang, and T. A. O'Connell. The science of interaction. *Information Visualization*, 8(4):263–274, 2009.
- [4] E. Segel and J. Heer. Narrative visualization: Telling stories with data. *IEEE Transactions on Visualization and Computer Graphics*, 16(6):1139–1148, Nov 2010.
- [5] J. van Wijk. The value of visualization. *IEEE Visualization*, pages 79–86, 2005.